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Environmental Security: Dimensions, Doctrine and Direction

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A paper submitted to the faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

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18 May 2004

Abstract of

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ENVIRONMENTAL SECURITY: DIMENSIONS, DOCTRINE AND DIRECTION

INTRODUCTION

Though hardly a new issue, the notion that a distinct interplay exists between the environment and national security has grown dramatically in recent years.¹ In concept and practice, environmental security now enjoys a global governmental, academic and civic following and has grown to encompass an enormous range of sub-issues, categories and topics. The development and exploration of environmental security currently involves the US Deputy Under Secretary of Defense (Installations and Environment), the NATO Committee on the Challenges of Modern Society, the United Nations Environment Programme, various conferences, declarations, protocols and several universities and institutes. Today, it is possible to search an Environmental Security Database housed at the University of Toronto, receive a Master's Degree in Environmental Security from the University for Peace in Costa Rica and then go to work for Environmental Security Inc. in New York City. Within these institutions and programs, environmental issues with national security and operational military implications abound, and are not viewed as future but rather contemporary notions, acknowledged as non-traditional, or at least unconventional, but reflecting clearly identifiable security challenges facing the world today with increasing implications for the future.²

Within this growing field of study, however, considerable problems exist. First, the definition of environmental security itself has developed broad and divergent meanings, context and use. In its most general sense, environmental security encompasses the natural and physical environment as a whole and considers any and all environmental interactions therein, both natural and manmade. Environmental security from this perspective includes issues as diverse as safety from natural disasters to global environmental degradation and

considers their effects on general health, quality of life as well as safety and security. For others, linking the environment with security demands a much narrower scope and refers specifically to how environmental change affects stability and may contribute to conflict.³ Even in this narrower sense the topic is large, growing and wrought with controversy.

Second, as Thomas Homer-Dixon points out, much of the writing and study on environmental security remains anecdotal, hard to analyze, requires research in a “daunting range of disciplines” and customary military-oriented notions of national security are inadequate to understand highly interdependent transnational environmental relationships.⁴

Finally, hugely important but scientifically troubling worldwide environmental concerns such as global warming, biodiversity and desertification are often intermixed and conceptually lumped together with local environmental issues like pollution, groundwater protection and sustainable food production. In other words, environmental problems that are fairly easy to understand and improve, and which can be addressed by governmental entities including the military, are often conceptually combined with global issues which may be either natural environmental phenomena or which are so inextricably linked with human progress that their continuance is inevitable and their effects must be managed rather than mitigated. Either way, practical and ethical considerations of environmental security often contain diametrically opposing points of view – each with good, and poor, science - and each with their own moral prerogatives. Consequently, and unfortunately, rather than narrowing our focus toward discerning just what environmental security means, a contentious and broad environmental outlook has resulted in what P.H. Liotta describes as “understandings of, and definitions for, environmental security range[ing] so broadly that its meaning takes on something for everyone – and perhaps, ultimately, nothing for no one.”⁵ And, nowhere is the

confusing nature of just what environmental security means more evident than within the US Department of Defense (DoD).

The DoD has a long history with environmental-related issues dating back to its inception. Over the years, however, evolving and disparate environmental issues were consolidated within a common DoD environmental security blanket. And though the Department has made great strides in occupational health, local environmental stewardship, environmental protection and safety, it has failed to adequately incorporate specific programs to deal with environmental ethics, the environmental consequences of military operations or environmental threats to regional stability. The result has been that environmental security for the DoD retains broad, long-standing and confusing dimensions while, at the same time, it also lacks critical components. Without proper delineation and scope, the ability of the DoD to differentiate the relative importance of environmental security threats or vulnerabilities is limited. And, absent clarity on the full dimensions of environmental security and how they relate to current national security and military objectives has meant that the military currently lacks the ability to fully conceptualize, plan for and ultimately mitigate current and newly evolving environmental threats. Simply, environmental security, though widely acknowledged as having an influence on national security, has been generalized and marginalized within the DoD and thus restricted in its ability to develop and incorporate new environmental security insight.

As I will illustrate, in its structure, doctrinal development and operational planning schemes, environmental security is dimensionally limited within the DoD. Although there are fair reasons for this, in failing to correctly understand what environmental security means, adequate environmental doctrine, training and planning constructs have also failed to develop

where, interestingly, current directives and joint training instructions already demand their inclusion. This is because the environment is a unique security concern - though often lacking clear scientific and causal connections to conflict or national objectives, its consideration has still proven compelling. Because of this, environmental verbiage has managed to work its way into instructions and requirements despite the lack of a clear understanding of its dimensions.

It is the purpose of this paper, therefore, to point out that environmental security continues to be an important and valid national security concept whose impact appears to be increasing. It is acknowledged globally, its principles are resident in US national security and military strategy and environmental concerns are included in current DoD instructions and defense planning guidance. Lacking appropriate definition, doctrine and structure, however, US environmental security currently lacks real prescriptive power, and its current training and planning documents are inadequate. By explaining how this occurred, where focus and development is needed and by providing some examples, I hope to point out what needs to be done to develop and improve the capacity of defense planners and practitioners to understand the scope, nature and demands of environmental security and how to articulate a strategy to incorporate all its dimensions across the full spectrum of military operations.

Environmental Security and the US Department of Defense

Today, the concept of environmental security has found its way from obscurity into main stream military thought. From its beginnings in 1947 under the National Security Act, the Office of the Secretary of Defense (OSD) has contained environmental-related elements throughout its organization.⁶ In 1970 under President Nixon, the creation of the

Environmental Protection Agency (EPA), the Council of Environmental Quality (CEQ) and the Occupational Safety and Health Administration (OSHA) directly resulted in disparate DoD environmental elements coalescing into a common and more “prominent role” within the Defense Department.⁷ This trend continued with the Joint Chiefs of Staff (JCS) establishing an Environmental Services Division within the J3 followed closely by the creation of DoD directives and instructions containing specific environmental discussion and demanding environmental consideration.⁸ Through the 1980s, and with increasing pressure for all federal installations and agencies to comply with the same environmental standards as industry and the rest of the country, the DoD further responded by espousing the goal of becoming “the federal leader in agency environmental compliance and protection.”⁹ Further initiatives, directives and organization followed, culminating, under President Clinton, with the establishment of the office of the Deputy Under Secretary of Defense for Environmental Security (DUSD (ES)) in 1993.¹⁰ At the same time, explicit wording in The National Security Strategy (NSS) touted environmental security issues as “pose[ing] long-term dangers to our security and well-being.”¹¹ In short, by the middle 1990s, environmental security had become an integral part of the DoD and, theoretically, occupied the highest levels of defense mission thinking. And, as a result of this focus and development, DoD directives and instructions now demanded that environmental concerns be addressed at all levels of military planning. But, what exactly had environmental security become, what were its dimensions? A look at the eight environmental security programs from the DUSD (ES) help provide the answer, and include:

- Pollution prevention to stop pollution at the source whenever possible and properly manage, recycle, or dispose of potential pollutants.

- Technology to fulfill all DoD environmental security objectives more efficiently and economically
- Safety and health protection of civilian and military personnel and their families
- Conservation to protect and preserve the natural and cultural resources DoD holds in public trust
- Compliance to ensure that DoD operations adhere to environmental, safety, and occupational health laws, regulations and standards
- Cleanup to restore DoD facilities and reduce risk from contaminated sites
- Explosive safety to prevent explosive incidents and to protect people, equipment, and facilities from the effects of accidental explosion
- Pest management to protect DoD personnel from vector-borne disease and to assure proper use of pest control methods

What is immediately clear looking at these programs is that environmental security had assumed a wide umbrella for environmental issues with a focus in three basic areas: 1) Safety, 2) Occupational Health and 3) Facility Stewardship. These issues well covered the NSS message about environmental dangers to safety and well being, but how well did these programs address the stability and potential conflict aspects of environmental security? A look at the formal definitions offer little help, for instance in 1979 the DoD defined the environment simply as “the natural and physical environment,” but specifically excluded “social, economic and other environments.”¹² Early on, the environmental connection to social or economic issues was clearly and purposely divorced. By 1996, however, that connection had been reintroduced and the environment was now defined as “Air, water, land, man-made structures, all organisms living therein, the interrelationships that exist among them, and archeological and cultural resources.”¹³ The definition of environmental security, however, remained more narrowly defined as that which “enhances readiness by institutionalizing the Department of Defense’s environmental safety, and occupational health awareness, making it an integral part of the Department’s daily activities.”¹⁴ Though the DoD

had acknowledged that an interrelationship exists between security and the environment (and continued to emphasize and make significant steps forward in environmental safety, and occupational health), it still failed to clarify, prioritize, and emphasize security in light of what the NSS also stipulated as “natural resource scarcities [that] often trigger and exacerbate conflict,” or those “environmental and natural resource issues [which] can impede sustainable development efforts and promote regional stability.”¹⁵ Viewed from the complete perspective of the NSS, the DoD’s definition of environmental security and the organization that bears that title had failed to organize itself toward those environmental factors that contribute to conflict and stability.¹⁶ And, although the current DUSD (now Installations *and* Environment) has augmented the previously discussed eight programs to include a program “that ensures DoD personnel understand [the] environmental responsibilities of their jobs” and a planning analysis program to “focus on the development and operation of installations,” one still sees a lack of integration and understanding of conflict and regional stability as DoD environmental security priorities.¹⁷

As the NSS itself has evolved from President Clinton’s vision of “Engagement” to President Bush’s “Preemption,” specific environmental emphasis has become harder to find. The current focus on terrorism, however, espouses direct ties to notions of regional stability and failed or failing states and the rise of terror.¹⁸ Environmental degradation, resource scarcity and change are precisely identified as indicators which researchers have recognized as proximate or, at least, partial factors responsible for regional stability breakdowns.¹⁹ In fact, President Bush’s NSS, in seeking to proactively resolve regional crisis, alleviate global suffering and restore stability with a realistic and regional focus, reflects largely the same goals and fears expressed by President Clinton’s NSS - only framed in a different way.²⁰

And, in emphasizing that “the major institutions of American national security were designed in a different era to meet different requirements...and all must be transformed,” it seems the time to fully incorporate all dimensions of environmental concern into our collective security assessment has come.²¹ Simply, current environmental security programs, instructions and doctrine reflect an ad hoc mixture of orphan programs, blind initiative, compliance and lip service. In order to be responsive to *Joint Vision 2020*’s view of an uncertain future where military operations must face new and asymmetric adversaries *and* contribute to peace and stability, then organization and clarification on environmental security must be attempted.

As long-standing, recurring and important issues, the broad notions of safety, occupational health and facility stewardship are important aspects of DoD’s mission and, doctrinally and structurally, have been appropriately developed, staffed and built into operational and functional planning. What is needed is the addition of a similar structure and focus on the conflict, stability and even the practical economic and ethical aspects of environmental security. Because DoD policy currently demands the “Integrat[ion of] environmental considerations into DoD plans for defense activities and operations” and “DoD activity and operational planning should fully consider the environmental consequences of proposed actions in conjunction with national security requirements and other considerations of national policy,” then effectiveness in addressing these demands also requires that training and doctrinal development recognize where all the aspects of environmental security fit appropriately into all military operational arenas.²² Stepping beyond the uncertain science surrounding global environmental issues, and the general current disdain for further “green” initiatives, and into the realm of prudent preemption, this integration will begin the bounding of a full environmental security understanding. An

understanding which does not necessarily require the creation of new DoD instructions but, rather, will serve to make the current ones more effective.

The Dimensions of Environmental Security

In addition to facets of environmental security currently resident within DoD programs, there can be no question that the purposeful and unintended consequences of war itself can and do result in devastating effects on the natural environment. Historical examples are easy to find and include the Roman salting of Carthaginian fields during the Punic Wars to the recent destruction of Kuwaiti oil wells by retreating Iraqi forces. In between, crops have been burned, islands leveled, vegetation chemically defoliated and forests cleared without remorse to suit military operations.²³ Oil spills, inordinate and purposeful toxic chemical and other pollution as well as unexploded munitions are the natural residue of modern warfare and pose both short and long term environmental threats. Disregard for the environmental consequences of war is largely the legacy of a mindset where natural resources were once deemed boundless and the environment was viewed as having an unlimited capacity to recover from human disruption. Defeat of the enemy was itself a valid end state, with the environment seen as capable of scabbing over, eventually, to heal any war damage. The environment merely posed technical or logistical challenges to be overcome, resources to be exploited or as avenues to be used rather than a threat in its own right to be planned for and mitigated.²⁴ And, although this mindset has been altered slightly in recent years by general environmental awareness and through the force of environmental compliance, environmental concerns will doubtless continue to take a back seat to traditional military demands of national security. Shy of drastically impeding or limiting necessary military options, however, the environmental repercussions of military operations in the

modern world must now be considered important aspects of military planning. This is especially so for post war stability in environmentally sensitive regions.²⁵ Today, effective stabilization, nation-building and military operations other than war (MOOTW) often demand an intact and sustainable agricultural capacity, clean water and the safety and health of the combatants *and* local populous from the residue of war. Indeed, environmental analysis *is* required under current DoD instructions but, without the proper program backing, education and expertise, merely requesting that an analysis be completed cannot hope to yield satisfactory results. Simply, policy background, education and doctrine are largely inadequate with regard to evaluating environmental threats for combatant commanders to fulfill their own environmental security requirements. In short, in today's world the importance of understanding the environmental affects of military operations has grown, and efforts to formally understand this dimension of environmental security have not been adequately developed. Also, as the world's only superpower, and dedicated to shaping the international environment under the current NSS to "create conditions favorable to US interests and global security," environmental strategies must be developed which reflect our national environmental concerns, ethical responsibilities, economic prudence and post-conflict desires. This seems axiomatic, however, until the tools and expertise are developed to "know what we don't know" and plumb how all the factors contribute in different ways then we will never truly be able to perform a viable environmental analysis.

Likewise, the implications of training, housing and caring for a large modern military force have direct environmental implications which must be treated both practically and ethically. The before-mentioned safety, occupational health and stewardship programs largely deal directly with these mostly domestic demands and certainly represent the best

developed of the environmental security dimensions. Continued prudent compliance with and education about the nation's environmental policy provides the bedrock for environmental doctrine. Our treatment of the safety and health of service members, their families and proper stewardship of facilities also sets an example for the world and can help foster foreign military to military cooperation. Furthermore, an added benefit of prudence within this level of environmental security is the ability to sustain military facilities in a more natural state, allowing the military a continued and realistic environment to better "train like you fight."²⁶ This well-developed aspect of environmental security needs to remain the basis from which neglected aspects of environmental security develop.

Though a substantial case can still be made that the natural environment remains profoundly resistant to human influence, growing world populations and their increasing demand for limited resources means that tension and potential associated regional conflict will continue to occur. The US's interest in global stability, democracy and economic opportunity demands that analysis continue as to where these conflicts may occur, where they are occurring and where our national interests indicate we must act. Although resource scarcity has precipitated conflict throughout history, never before has the US so committed itself to "preemptive" measures to both understand and solve these regional issues.

Environmental Security, therefore, is not limited to notions of safety, health or well being as currently reflected in the structure of DoD environmental security programs or in current planning documents and instructions. Neither is it restricted to discrete notions of stability and conflict. Rather, environmental security has at least three broad dimensions – 1) the direct effects of military operations and warfare, 2) the safety, health and stewardship of

military personnel and facilities and 3) the environmental dimensions of regional stability and conflict. And, though casting a wider net risks expanding the environmental security blanket beyond its current functional capacity, this delineation strives to incorporate both the resident and required elements needed to begin a comprehensive look at the environment/security interplay. It is important to realize that each aspect reflects a crucial and realistic attempt to cohesively link current and future notions of environmental security. Each is an important aspect with its own practical and ethical considerations, and each needs further development in its own right within a comprehensive environmental security program.

Environmental Doctrine

Whether consciously or not, and for various reasons, defense planners have long been cautious of perceived infringements on traditional national security standards to include many non-traditional threats or vulnerabilities.²⁷ This is especially true for those threats perceived as “soft” in a time where “hard” military demands are stretched to the maximum across the globe. Hinted at following the Cold War and screamed by many following the September 11 tragedies, non-traditional threats from non-traditional actors have emerged stronger than ever and currently dominate the new face of modern security. Yet, traditionalist notions of doctrine persist with staunch advocacy. Doctrine, by its very nature, requires a long lead turn but the environmental clarion call has long been sounded. As previously noted, environmental security is unique in that its importance has been validated in NSS, codified in DoD instructions and planned for despite scientific uncertainty, definitional confusion and controversy. The real problems lie in taking the next step, by pushing the doctrinal

development to train and prepare the armed forces to take a more proactive and effective role in environmental security.

Although it is within the realm of science and technology where revolutions in military affairs have traditionally focused, *Joint Vision 2020* is also careful to acknowledge that technology alone is not the lone provider of change within the armed forces and that “development of doctrine, organizations, training, and education” find equal and sometimes even greater importance.²⁸ As joint publications point out, and current experience has validated, the strategic context of contemporary threats faced by the US and her armed forces “are more ambiguous and regionally focused than during the Cold War.”²⁹ And, although the difficulty in predicting which nations or groups may threaten US interests is acknowledged, “predictions should be attempted, and with a process that allows for rapid dissemination of strategic estimates.”³⁰ As stipulated in the National Security and Military Strategy, environmental security represents a transnational “human emergency other than armed conflict” which can threaten US interests, challenge economic growth and which can contribute to conflict.³¹ Since “Joint operations doctrine is built on a sound base of warfighting theory and practical experience,” it follows that an environmental theory for armed conflict must be developed from which practical experience can benefit and augment.³² To do this, however, all of the broad dimensions of environmental security must be indoctrinated, weighed and understood by the joint planner within an ethical and national-interest viewpoint. Lacking this, environmental concerns affecting stability and supporting national interests will continue to exist in word only, awaiting a consensus, definitional clarity and resources which may never arrive.

Environmental doctrine, therefore, concerns itself with every aspect of military operations. Its basis lies in the sustainable treatment of training grounds, safety of the forces and regard for base facilities and ranges. This foundation is reinforced by compliance with local and national laws and the National Environmental Policy Act (NEPA). For the military planner, environmental doctrine further means an appreciation for the varying degrees by which environmental change can disrupt stability and precipitate conflict and an awareness of their causal links. Also, military operations themselves need to weigh the environmental impact of their actions against the mission demands and desired end state. Unnecessary damage, especially to crucial environmental infrastructure such as agriculture and fishing grounds, needs to be avoided just as one would avoid unnecessary infrastructural damage to technological sectors in order to hasten stability and foster peace in the post conflict stage. And finally, the military's ability to exert influence on the rest of society with ethical environmental practices is unique. As the manager of huge tracts of land, vast ranges, industrial complexes and installations, the military's influence on the local environment and business can be enormous.³³ The DoD must also promote the knowledge that environmentally sound practices need not compromise training or the mission and may actually augment training, save money and foster regional stability in the long run.³⁴ The military's ability to simultaneously influence the marketplace and public opinion place it among the most important vehicles of environmental awareness and protection. And, in doing so, remains directly in keeping with current National and Military Strategic demands.

Recommendations for Joint Planning and Training

It is one thing to require in joint planning guidance "in sufficient detail [the] environmental considerations that affect the OPLAN during all phases of the operation" but,

as I have indicated, quite another to ensure that planners have the doctrinal grounding, background, training or resources necessary to understand what those considerations entail.³⁵ And, although a background framing the multiple dimensions of environmental security helps provide the starting point for effective planning, the planning documents themselves must also be written in such a fashion, with proper references included, to lead planners in the proper direction despite lacking that appropriate background or training. For example, Appendix L for the Joint Operational Planning and Execution System (JOPES) provides environmental planning guidance and defines responsibility to support joint operational planning. Both its references and concept of operations, however, need adjustments to mirror the full dimensions of environmental security. For instance, its references reflect, not surprisingly, the DoD's narrow focus on safety, occupational health and facility stewardship.³⁶ There are no references for environmental links or discussion on regional stability concerns, environmental ethics or national environmental policy. In fact, the root DoD directive listed (6050.7 – circa 1979) is precisely the reference previously noted as stipulating that social and economic effects specifically *do not* give rise to any requirements under the directive.

As an overarching planning document for any region the document is, in fact, a good start. It merely reflects the department's current limited outlook. And, in fact, it even goes a bit deeper in asking planners to “identify those environmental planning factors which, although not mandated as a matter of law or regulation...protects the health and safety of US, allied forces and noncombatants...[and] address[es]...solid and liquid waste management, hazardous material management, flora and fauna protection, archeological and historical preservation, and spill response.”³⁷ Simply, what must be added is emphasis and references

addressing the environmental links to the local and regional economy, cultural relevance, environmental ethics and the destabilizing potential of environmental degradation whether imposed by military operations or through local environmental degradation. Further, the Joint Task Force Headquarters Master Training Guide (CJCSM 3500.05A) points out that Annex L need only be developed as deemed necessary by the planning staff and again points to DODD 6050.7. Step one asks planners to “Determine if the operation will have a significant impact on the environment...if it will not, [to] document findings in an Environmental Assessment with a finding of ‘No Significant Impact.’” Here again, proper doctrine will both emphasize that an environmental assessment is almost always necessary and proper training will enable planners to actually evaluate the situation adequately.

Since the research on the extent to which environmental issues can specifically affect stability and conflict is still developing, effective planning must also include some degree of “out of the box,” predictive thinking coupled with regional and local experience. Military Operations Other than War with its focus on “detering war, resolving conflict, promoting peace, and supporting civil authorities in response to domestic crises” are especially pertinent in regions of the world most susceptible to environmental disruption leading to conflict.³⁸ Properly treated, environmental security does not just treat the symptoms of regional instability but may actually serve to protect root sustainable capabilities critically necessary for stability. Protection of basic needs are also the least likely to require long term US or coalition support or sustained financial aid. Though certainly not limited to MOOTW, by clearly distinguishing what constitutes environmental security concerns we open up our ability to understand or dismiss other critical dimensions of security for military planning and execution. Properly done, environmental constraints should not limit operational maneuver or

action unless they grossly impact basic environmental requirements for stability in the post conflict period. Effectively done, environmental considerations maximize military efficiency and preserve critical sustainable infrastructure.

Conclusions

This paper was not meant to chronicle the historical or potential environmental effects of military operations or to survey the environmental consequences of war. The evidence of these effects is well documented with conventional war and theoretically developed with regard to nuclear war. Nor, did I seek to reiterate, critique or even validate the body of evidence linking the current and potential concerns about environmental degradation and change for national security – suffice it to say that numerous threats or vulnerabilities have been identified and, deemed valid, have already been codified in National Security and Military Strategy, accompanying DoD instructions and joint planning and training documents. This, despite often shaky science and vague causal connections linking environmental security to regional conflict. Rather, my aim was to point out that the DoD has neglected several critical dimensions of environmental security which limit our ability to effectively understand and deal with these threats. These mission elements, however, are important current aspects of effective military operations, planning efforts, active war efforts and in military operations other than war. It is my contention that, as such, existing programs and current instructions need to be reorganized and rewritten with explicit definition, delineation and guidance for joint doctrine and training. This will increase military effectiveness, develop the doctrine for effective planning and will foster military planners who understand how and where environmental considerations play critical roles in war planning and military operations. It was never my contention that the notions of

environmental protection, environmental stewardship and occupational safety and health programs are not important elements of national security and don't belong within the same management area as environmental security. On the contrary, these elements play a critical role in the doctrinal development of environmental security. Rather, environmental security needs to be clarified and differentiated to include those legacy environmental elements as well as the stability and security implications directly involving military operations and MOOTW. With this focus provided, the causal linkages between environmental issues and military operations can better develop, be studied, planned and trained for under guidance and structure which, for the most part, already exists.

From journalist Robert Kaplan's seminal 1994 *Atlantic Monthly* article titled "The Coming Anarchy," which chronicled environmental scarcity and conflict, to a recently leaked Pentagon report on the potentially devastating effects of global warming, the link between the environment and security has and continues to gain significant currency in the national security debate. This trend will likely continue as our influence on the natural world challenges the environment's ability to regenerate itself or provide for the increasing demands of growing populations. This trend is especially true in underdeveloped nations whose stability and potential for conflict pose current and future threats to our National Security.

Notes

¹ According to the Center for Unconventional Security Affairs at UC Irvine, the growth of Environmental Security as a distinct area of study is largely a product of the change in the security dynamic following the Cold War where established security notions were augmented to include growing evidence that human-generated pollution, ecosystem simplification and resource depletion had serious potential security implications. "Environmental Security." <http://www.cusa.uci.edu/environmental_security.htm> [26 April 2004].

² For a good overview of current international environmental treaties, conventions and guidance see: "Environmental Guidelines for the Military Sector: A Joint Sweden – United States Project" sponsored by the

NATO Committee on the Challenges of Modern Society,” June 1996.
<<https://www.denix.osd.mil/denix/Public/ES-Programs/Intl/Guidelines/Cover.html>> [26 March 2004].

³ From DOD Directive 6050.7, “Environmental Effects Abroad of Major Department of Defense Actions,” 31 March 1979, ASD(MRA&L): “Environment means the natural and physical environment, and it *excludes social, economic, and other environments*. (emphasis added) According to this document, social and economic effects do not give rise to any requirements under this directive. For conflict and stability definitional approaches to environmental security see Thomas Homer-Dixon or P.H. Liotta.

⁴ Thomas F. Homer-Dixon, “On the Threshold: Environmental Changes as Causes of Acute Conflict,” *International Security*, Vol. 16, No. 2, Fall 1991, 4-5.

⁵ P.H. Liotta, *The Uncertain Certainty* (Oxford: Lexington Books 2003), 72.

⁶ In fact, one of these responsibilities-explosives safety- has been part of the military establishment since 1928 as the “Department of Defense Explosives Safety Board.” Taken from “Environmental Security: History of Environmental Security in the Office of the Secretary of Defense,”
<<https://www.denix.osd.mil/kenix/Public/News/DUSDES/ES-History/eshistory.html>> [26 March 2004].

⁷ Ibid., p. 2.

⁸ Executive Order 12114, “Environmental Effects Abroad of Federal Actions,” 31 March 1979, drove DoDD 6050.7 (Same title, still in effect) which provides policy for DoD components (OSD, the Military Departments, JCS, the Unified and Specified Commands and the Defense Agencies) and procedures to enable DoD officials to be informed and take account of environmental considerations when authorizing or approving certain major federal actions that do significant harm to the environment of places outside the US.

⁹ Quote by Secretary of Defense Cheney articulated in a 1989 memorandum to the Service Secretaries, from: “Environmental Security,” <http://www.defenselink.mil/execsec/adr95/envir_5.html> [26 April 2004]

¹⁰ Currently the Deputy Under Secretary of Defense for Installations and Environment (DUSD (I&E))

¹¹ “The National Security Strategy of the United States of America,” September 1997.

¹² DOD Directive 6050.7

¹³ Taken directly from DOD Directive 4715.1, “Environmental Security,” 24 February 1996.

¹⁴ Ibid.

¹⁵ National Security Strategy, 1997.

¹⁶ Given DoD’s confusion about just what environmental security means it is not surprising that top military leaders are equally confused about its dimensions and hold many “versions” of its definition. In fact, P.H. Liotta in *The Uncertain Certainty* points out that a review of the literature for defining environmental security shows that more than twenty common definitions can be found.”

¹⁷ DUSD (I&E) Programs (2004) inc. Cleanup, Compliance, Conservation, Education/Training, Environmental Quality, Explosives Safety, Fire and Emergency Services, International (focus on Military to military cooperation), Legacy Programs, Pest Management, Planning (focus on operation on installations and disposal of weapons systems), Pollution Prevention, Safety and Technology. “DUSD (I&E) Programs,”
<<https://www.denix.osd.mil/denix/Public/ES-Programs/env-sec.html>> [26 March 2004].

¹⁸ The notion that regional instability and failed states give rise to or provide the fertile ground from which terrorism springs runs throughout both the NSS of President Clinton and President Bush. For more on how

environmental change effects stability and leads to acute national and international conflict see Thomas F. Homer-Dixon, On the Threshold and Carl Conetta, "Dislocating Alcyoneus: How to combat al-Qaeda and the new terrorism," Commonwealth Institute Project on Defense Alternatives Briefing Memo #23, 25 June 2002, and Douglas H. Dearth, "Failed States: An International Conundrum," Defense Intelligence Journal, 5-2 1996, 122.

¹⁹ Ibid, see also Liotta and Dixon.

²⁰ In the NSS (2002) p. 19 under Ch. 6 "Ignite a New Era of Global Economic Growth Through Free Markets and Free Trade," we find environmental security downgraded as a distinct and specific threat only to emerge as *Protect the Environment and Workers*. Here the environmental "well being" notion with regard to economic prosperity is emphasized. Interestingly, concern over greenhouse gas emissions are found under the heading *Enhance energy security*. In Ch. VII, we also find the environmental security issues of public health and sustainable development under the heading "Expand the Circle of Development by Opening Societies and Building the Infrastructure of Democracy."

²¹ NSS (2002), p. 29.

²² DoD Instruction 4715.9 "Environmental Planning and Analysis," USD (A&T), 3 May 1996.

²³ For a more comprehensive historical overview of the effect of warfare on the environment see: Richard W. Fisher, "The Environment and Military Strategy," Air & Space Power Chronicles.
<<http://www.airpower.maxwell.af.mil/airchronicles/cc/fisher.html>> [24 April 2004]. 1-4.

²⁴ Ibid.,

²⁵ This is especially true in equatorial regions of the world where nutritional biomass is primarily located in the forest canopy and, once lost, the ability of the soil to provide sustainable agricultural is largely lost. This reality is unlike the temperate regions of Europe or North America where forests can re-grow even following clear cutting.

²⁶ Jim Garamone, "Training, Environment Needs not Mutually Exclusive, DoD Says," American Forces Information Service News Articles, 14 May 2002.
<http://www.defenselink.mil/news/May2002/n05142002_200205142.html>

²⁷ For an interesting discussion on threats vs. vulnerabilities see P.H. Liotta p. 73.

²⁸ Gene Myers, "Concepts to Future Doctrine" A Common Perspective, April 2002 issue, p.6.

²⁹ Joint Publication 3-0, Doctrine for Joint Operations, 10 September 2001.

³⁰ Ibid., p.vii.

³¹ National Military Strategy, 1997, p.9

³² Joint Pub 3-0, p. ix

³³ Environmental Guidelines for the Military Sector, p.7.

³⁴ Ibid, p. 8.

³⁵ CJCSM 3122.03A, Joint Operation Planning And Execution System, Volume II: Planning Formats and Guidance, 31 December 1999. c-555

³⁶ References listed for CJSM 3122.03A are a. Joint Pub 4-04, 26 September 1995, “Joint Doctrine for Civil Engineering Support,” b. DOD Directive 6050.7, 31 March 1979, “Environmental Effects Abroad of Major Departments of Defense Actions.” c. Joint Staff Instruction 3820.01B, 1 May 1998, “Environmental Engineering Effects of DoD Actions.” d. DoD Instruction 4715.5, 22 April 1996, “Management of Environmental Compliance at Overseas Installations.” e. DoD Instruction 4715.8, 2 February 1998, “Environmental Remediation for DoD Activities Overseas.” f. Applicable Country-Specific Governing Standard (FGS) and g. DoD Overseas Environmental Baseline Guidance Document (OEBGD).

³⁷ Ibid., L-2.

³⁸ Joint Publication 3-07, Joint Doctrine for Military Operations Other Than War, 16 June 1995, I-1.

Bibliography

Conetta, Carl. “Dislocating Alcyoneus: How to Combat al-Qaeda and the New Terrorism,” Commonwealth Institute Project on Defense Alternatives Briefing Memo #23, 25 June 2002

Dearth, Douglas H., “Failed States: An International Conundrum,” Defense Intelligence Journal, 5-2 1996, 122.

Department of Defense., Environmental Effects Abroad of Major Department of Defense Actions,” DOD Directive 6050.7, (Washington, DC: 1979)

Department of Defense., Environmental Security, DOD Directive 4715.12, Washington, DC: 1996.

Department of Defense., Environmental Planning and Analysis,” DoD Instruction 4715.9 USD (A&T), Washington, DC: 1996.

Department of Defense., Doctrine for Joint Operations, Joint Publication 3-01, Washington DC: 2001.

Department of Defense., Joint Operation Planning And Execution System, Volume II: Planning Formats and Guidance, CJCSM 3122.03A, Washington DC: 1999.

Department of Defense., Joint Doctrine for Military Operations Other Than War, Joint Publication 3-07. Washington DC:1995.

Department of Defense. Joint Vision 2020, Washington DC: Joint Chiefs of Staff 2000.

Department of Defense. National Military Strategy of the United States of America, Washington DC: 1997

“DUSD (I&E) Programs,” <<https://www.denix.osd.mil/denix/Public/ES-Programs/env-sec.html>> [26 March 2004].

“Environmental Guidelines for the Military Sector: A Joint Sweden – United States Project” sponsored by the NATO Committee on the Challenges of Modern Society,” June 1996. <<https://www.denix.osd.mil/denix/Public/ES-Programs/Intl/Guidelines/Cover.html>> [26 March 2004].

“Environmental Security.” <http://www.cusa.uci.edu/environmental_security.htm> [26 April 2004].

“Environmental Security: History of Environmental Security in the Office of the Secretary of Defense,” <<https://www.denix.osd.mil/kenix/Public/News/DUSDES/ES-History/eshistory.html>> [26 March 2004].

Fisher, Richard W.. “The Environment and Military Strategy,” Air & Space Power Chronicles. <<http://www.airpower.maxwell.af.mil/airchronicles/cc/fisher.html>> [24 April 2004]. 1-4.

Garamone, Jim. “Training, Environment Needs not Mutually Exclusive, DoD Says,” American Forces Information Service News Articles, 14 May 2002. <http://www.defenselink.mil/news/May2002/n05142002_200205142.html>

Homer-Dixon, Thomas F.. “On the Threshold: Environmental Changes as Causes of Acute Conflict,” International Security. Vol. 16, No. 2, Fall 1991

Liotta, P.H.. The Uncertain Certainty. Oxford: Lexington Books, 2003

Myers, Gene. “Concepts to Future Doctrine” A Common Perspective, April 2002.

President, Executive Order. “Environmental Effects Abroad of Federal Actions,” 1979, 12114.

President. “The National Security Strategy of the United States of America,” 1997.

President. “The National Security Strategy of the United States of America,” 2002.

Rothschild, Emma. “The Last Empire: Security and Globalization in Historical Perspective” Jerome E. Levy Occasional Papers, no 5. Newport: US Naval War College, 2004.

Vego, Milan. Operational Warfare. U.S. Naval War College, Newport, Rhode Island, 2000.